Final Report for the NASA IUE Grant No. NAG 5-2112

Title: A New SNR Candidate Hidden in the Luminous HII Region N159

and

Title: Interstellar Absorption Lines as Diagnostics for Hidden SNRs

and

Title: The Supergiant Shell LMC3

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Grant Number: NAG 5-2112

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1. IUE Projects Supported by the Grant NAG 5-2112

The grant NAG 5-2112 was originally awarded to the IUE observing program "A New SNR Candidate Hidden in the Luminous H II Region N159" in the amount of $6,000. An increment of $1,500 was later awarded to the IUE observing programs "Interstellar Absorption Lines as Diagnostics for Hidden SNRs" and "The Supergiant Shell LMC3".

2. Observations and Results

The observations for the first project were very noisy, and no publishable results were obtained. The observations obtained for "Interstellar Absorption Lines as Diagnostics for Hidden SNRs" include two stars in the superbubble N144 and one star in the superbubble N11; the observations for "The Supergiant Shell LMC3" include two stars in LMC3. These spectra are useful and are being analyzed together with our ROSAT PSPC X-ray data of the associated superbubbles or supergiant shell in order to achieve a comprehensive understanding of the physical processes that produce the UV absorption lines and the diffuse X-ray emission.

We are currently preparing for three papers for publication, about the superbubble N11, the superbubble N144, and the supergiant shell LMC3, respectively. We expect to finish the paper on N11 by the end of May 1995, N144 by the end of July 1995, and LMC3 by the end of 1995.

3. Publications Resulted from the Grant Support

"Highly Ionized Gas in the Large Magellanic Cloud", 1993, in ASP Conf. Series No. 35, Massive Stars: Their Lives in the Interstellar Medium, ed. J. P. Cassinelli and E. B. Churchwell, pp. 363-365.
(Chu, Y.-H., Wakker, B., and García-Segura, G.)

"Ultraviolet Interstellar Absorption Lines in the LMC: Searching for Hidden SNRs," 1994, AJ, 108, 1696-1721.
(Chu, Y.-H., Wakker, B., Mac Low, M.-M., and García-Segura, G.)